

Ilonka Aylward  
v.  
City of Charlotte  
and  
Charlotte-Mecklenburg Stormwater Services (a.k.a. “Charlotte Stormwater Services,”  
a.k.a. “Charlotte/Mecklenburg Storm Water,” a.k.a. “Charlotte Storm Water Services,”  
a.k.a. “City of Charlotte Storm Water Services”)  
and  
Armstrong Glen, P.C.  
and  
Joseph (“Josh”) H. Letourneau, P.E.

**Ilonka Aylward’s Complaint**

## **Exhibit 15**

## **Amschler, Crystal C CIV USARMY CESAW (USA)**

---

**From:** Amschler, Crystal C CIV USARMY CESAW (USA)  
**Sent:** Friday, August 21, 2020 3:53 PM  
**To:** Hamstead, Byron  
**Subject:** Situation 1 NLEB Hinsdale-Tinkerbell CMSWS Mecklenburg County  
**Attachments:** Hinsdale-Tinkerbell CMSWS Cover Letter.pdf; Hinsdale-Tinkerbell CMSWS PCN.pdf

Byron,

Please see the below information as it relates to the NLEB for the project described below:

1) Project description. **Hinsdale-Tinkderbell CMSWS project**. This project involves impacts to waters of the US resulting from updates and improvements to an outdated storm drainage system. This work will involve infrastructure and stream channel improvements and will also result in updates and improvements to sanitary sewer infrastructure. Specific impacts include the temporary impact to 554 lf of stream channel and the permanent impact to 1,977 lf of impact (of which only 116 lf will result in stream loss).

2) Project location. The Hinsdale-Tinkerbell Stormwater Project includes several reaches of stream channel that are tributaries of McMullen Creek that are located within in the Beverly Woods neighborhood, roughly bounded by Sharon Road to the west and McMullen Creek to the east located in Charlotte, Mecklenburg County, North Carolina. 35.1325690078136, -80.825975924328

3) Estimate tree clearing in the USACE action area: approximately 5 acres.

Species: Northern long-eared bat (NLEB) (*Myotis septentrionalis*)

This project falls under Situation/Scenario 1 (i.e., it is NOT located in a red HUC and there are no percussive activities.)

USACE Rationale and Determination: The USACE conducted a GIS review of the project and surrounding areas and also reviewed the most current maps of confirmed/known hibernation and maternity (tree) sites for the NLEB at Blocked[http://www.fws.gov/asheville/htmls/project\\_review/NLEB\\_in\\_WNC.html](http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html) <Blocked[http://www.fws.gov/asheville/htmls/project\\_review/NLEB\\_in\\_WNC.html](http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html)> .

This project is located outside of the highlighted areas/red 12-digit HUCs and does not require prohibited incidental take; as such, this project meets the criteria for the 4(d) rule and any associated take is exempted/excepted.

U.S. Fish and Wildlife Service (Service) Concurrence: This notice is being sent to the Service in accordance with the surrogate consultation procedure/SLOPES that was established between the Service's Asheville and Raleigh Ecological Offices and the USACE, Wilmington District, for the NLEB. This project does not require prohibited intentional take of the NLEB and meets the criteria for the 4(d) rule; therefore any associated take is exempt and it is not necessary for the USACE to wait 30 days for the Service to object or concur.

Also, based on the information presented in the PCN and from our GIS database, the USACE is not aware of any other issues concerning listed species and/or critical habitat and has determined that the project would have no effect on any other species and/or critical habitat.

Please note, the plans will be sent via separate email due to their size.

Sincerely,

Crystal C. Amschler



Project Manager  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28403  
(828)-271-7980 Ext 4231

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

## Amschler, Crystal C CIV USARMY CESAW (USA)

---

**From:** Amschler, Crystal C CIV USARMY CESAW (USA)  
**Sent:** Wednesday, August 19, 2020 9:53 AM  
**To:** Thames, Kelly  
**Subject:** RE: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Hey Kelly,

I believe I'm good to go on what I need to issue, I just haven't had a chance. Hoping to get it out this week.

Crystal C. Amschler  
Project Manager  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28403  
(828)-271-7980 Ext 4231

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

---

**From:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Sent:** Wednesday, August 19, 2020 9:44 AM  
**To:** Amschler, Crystal C CIV USARMY CESAW (USA) <Crystal.C.Amschler@usace.army.mil>  
**Subject:** [Non-DoD Source] FW: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Hey Crystal,

Did you have any follow up regarding Hinsdale? What is your status on issuing the permit? The 401 was issued, but then when I checked the math, it needed revision. The revised was sent this week.

Thanks,  
Kelly

**Kelly Thames**, PWS  
D 704.338.6710 M 704.996.9986

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

---

**From:** Thames, Kelly  
**Sent:** Tuesday, August 11, 2020 7:45 AM  
**To:** Amschler, Crystal C CIV USARMY CESAW (US) <[Crystal.C.Amschler@usace.army.mil](mailto:Crystal.C.Amschler@usace.army.mil)>  
**Cc:** Shanaberger, Erin <[Erin.Shanaberger@ci.charlotte.nc.us](mailto:Erin.Shanaberger@ci.charlotte.nc.us)>  
**Subject:** RE: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Good Morning Crystal,

Thanks for calling Friday.

Attached is a signed PJD form from Erin, and a NCDWR form for the drainage on Sheet 15, including a photograph.

ROY COOPER

Governor

MICHAEL S. REGAN

Secretary

LINDA CULPEPPER

Director



NORTH CAROLINA  
Environmental Quality

August 18, 2020

DWR# 20-0788  
Mecklenburg County

Ms. Erin Shanaberger  
Charlotte/Mecklenburg Storm Water  
600 E. Fourth Street  
Charlotte, NC 28202

**Subject:** APPROVAL of 401 Water Quality Certification with Additional Conditions  
Hinsdale-Tinkerbell Stormwater Project

Dear Ms. Shanaberger:

You have our approval, in accordance with the General Certification and those conditions listed below, for the purpose proposed in your application dated June 15, 2020, and received by the Division of Water Resources (the Division) on July 1, 2020, and subsequent information on July 28, 2020. After reviewing your application, we have determined that this project is covered by Water Quality General Certification Number 4147 and 4133 which can be viewed on our web site at <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-401-isolated-wetlands-waters-program>. The General Certification allows you to use Nationwide Permit Number 3 and Regional Permit 163 once they are issued to you by the U.S. Army Corps of Engineers (COE). Please note that you should get any other federal, state or local permits before proceeding with your project, including those required by (but not limited to) Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations.

The above noted Certification will expire when the associated 404 permit expires unless otherwise specified in the General Certification. It is advised that all conditions of the Certification are reviewed prior to initiation of the project. In addition to the requirements of the Certification, you must also comply with the following conditions:

1. This approval is only valid for the purpose and design that you described in your application. If you change your project, you must notify us in writing, and you may be required to send us a new application for a new Certification. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required. If the property is sold, the new owner must be given a copy of the Certification and approval letter; and is thereby responsible for complying with all conditions. 15A NCAC 02H .0506 and 15A NCAC 02H .0507
2. The Mooresville Regional Office shall be notified in writing once construction at the approved impact areas has commenced. 15A NCAC 02H .0502 (e)



North Carolina Department of Environmental Quality | Division of Water Resources

Mooresville Regional Office | 610 East Center Avenue, Suite 201 | Mooresville, North Carolina 28115  
704.663.1699

3. Approved Impacts:

Type of Impact	Amount Approved Temporary Impact	Amount Approved Permanent Impact
Stream:		
Culvert/riprap	175 linear ft.	307 linear ft.
Culvert, bottomless	138 linear ft.	-
Check Dams	168 linear ft.	-
Sewer aerial	57 linear ft.	-
Sewer excavate	16 linear ft.	-
Stabilization	-	1670 linear ft.
Wetland	0 acre	0 acre

4. Diversion Ditches and other storm water conveyances as related to the sediment and erosion control measures shall be matted and/or stabilized to reduce sediment loss and turbidity. This includes interior/exterior slopes of sediment basins. 15A NCAC 02H .0506 (b)(3) and (c)(3)
5. Bare/fill slopes in excess of 10 feet in height and within 30 feet of surface waters shall be matted. 15A NCAC 02H .0506 (b)(3) and (c)(3)
6. Use of native vegetation and other soft stream bank stabilization techniques is recommended where practicable instead of riprap or other bank hardening methods. If riprap is necessary, it shall not be placed in the streambed, unless approved by DWR
7. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. 15A NCAC 02H .0506(b)(3)
8. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this Certification. 15A NCAC 02H.0506(b)(3)
9. The permittee shall report to the Mooresville Regional Office any noncompliance with this certification, any violation of stream or wetland standards [including but not limited to sediment impacts, and any violation of state regulated riparian buffer rules. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the applicant became aware of the circumstances. A written submission shall also be provided within 5 business days of the time the applicant becomes aware of the circumstances. The written submission shall contain a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, if the noncompliance has not been corrected, the anticipated time compliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Division may waive the written submission requirement on a case-by-case basis. 15A NCAC 02B .0200
10. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. 15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)

11. Upon completion of the project, the applicant shall complete and return a "Certificate of Completion" form to the 401/Wetlands Branch of the Division using the following link: <https://edocs.deq.nc.gov/Forms/Certificate-of-Completion>. 15A NCAC 02H .0507(c)

This Certification can be contested as provided in Articles 3 and 4 of the General Statute 150B by filing a written petition for an administrative hearing to the Office of the Administrative Hearings (hereby known as OAH). A petition form may be obtained from the OAH at <http://www.ncoah.com/or> by calling the OAH Clerk's Office at (919) 431-3000.

Within sixty (60) calendar days of receipt of this notice, a petition must be filed with the OAH. A petition is considered filed when the original and one (1) copy along with any applicable OAH filing fee is received in the OAH during normal office hours (Monday through Friday, 8:00 am to 5:00 pm, excluding state holidays).

The petitions may be faxed to the OAH at (919) 431-3100, provided the original and one (1) copy of the petition along with any applicable OAH filing fee is received by the OAH within five (5) business days following the faxed transmission. Mailing address for the OAH:

*If sending via US Postal Service:*  
Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714

*If sending via delivery service (UPS, FedEx, etc.):*  
Office of Administrative Hearings  
1711 New Hope Church Rd.  
Raleigh, NC 27609-6285


One (1) copy of the petition must also be served on DEQ as follows:

Mr. Bill Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center  
Raleigh, NC 27699-1601

This letter completes the review by the Division under Section 401 of the Clean Water Act. If you have any questions, please telephone Mr. Alan Johnson in the Mooresville Regional Office at 704-663-1699.

Sincerely,

DocuSigned by:

 for  
F161FB69A2D84A3...

Corey Basinger, Regional Supervisor  
Water Quality Regional Operations Section  
Mooresville Regional Office, DEQ

Attachment

cc: Crystal Amschler, Army Corps of Engineers, Charlotte, email  
Kelly Thames, HDR, email  
DWR 401 & Buffer Permitting Branch file  
MRO, Land Quality

**CERTIFICATE OF COMPLETION**

NCDWR Project No.: \_\_\_\_\_

County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Wetland & Buffer Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

***Applicant's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Agent's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Engineer's Certification***

\_\_\_\_\_ Partial      \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_ Date \_\_\_\_\_

## Amschler, Crystal C CIV USARMY CESAW (USA)

---

**From:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Sent:** Tuesday, August 11, 2020 7:45 AM  
**To:** Amschler, Crystal C CIV USARMY CESAW (US)  
**Cc:** Shanaberger, Erin  
**Subject:** [Non-DoD Source] RE: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP  
**Attachments:** HinsdaleTinkerbelle\_PJDForm.pdf; Drainage on Sheet 15.pdf; Drainage on Sheet 15.jpg; Impacts 1-8.pdf

Good Morning Crystal,

Thanks for calling Friday.

Attached is a signed PJD form from Erin, and a NCDWR form for the drainage on Sheet 15, including a photograph.

With regard to grading for benches at culvert inlets/outlets (attached): the grading linear footage amounts listed would also cover any bench grading at those locations.

- Benches would not be constructed in these locations if bedrock were encountered
- Impact 2: 65 lf (permanent non-loss)
- Impact 4: 70 lf (permanent non-loss)
- Impact 6: 50 lf (permanent non-loss)
- Impact 8: 100 lf (permanent non-loss)

Let me know if there is anything else you need.

Thanks!  
Kelly

**Kelly Thames**, PWS  
D 704.338.6710 M 704.996.9986

[hdrinc.com/follow-us](https://hdrinc.com/follow-us)

---

**From:** Amschler, Crystal C CIV USARMY CESAW (US) [mailto:Crystal.C.Amschler@usace.army.mil]  
**Sent:** Thursday, August 6, 2020 2:52 PM  
**To:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Subject:** RE: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

**CAUTION: [EXTERNAL]** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Kelly,

Thanks for this info which has helped resolve most of my questions. I still have some that I'd like to discuss over the phone. The benches and bank stabilization in particular I'm not sure that I've made it clear what I'm specifically asking. I attached some schematics that show the areas that I'm trying to figure out impacts for. also still a little confused about the streams associated with impacts 9/10 and 11 (schematic attached for this also). take a look and call me at 828-526-6013 when you get a chance to discuss.

Thanks,  
Crystal C. Amschler  
Project Manager







**NC Division of Water Quality –Methodology for Identification of Intermittent and  
Perennial Streams and Their Origins v. 4.11**

**NC DWQ Stream Identification Form Version 4.11**

Drainage on Sheet 15

<b>Date:</b> 4/27/2020	<b>Project/Site:</b> Hinsdale-Tinkerbell	<b>Latitude:</b> 35.138894°
<b>Evaluator:</b> K.Thames	<b>County:</b> Mecklenburg Co.	<b>Longitude:</b> -80.836906°
<b>Total Points:</b> <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	<b>Stream Determination (circle one)</b> <b>Ephemeral</b> Intermittent Perennial	<b>Other</b> Charlotte East <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = <u>5</u> )				
	Absent	Weak	Moderate	Strong
1 <sup>a</sup> Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	0.5	1	(1.5)
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

<sup>a</sup> artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = <u>5.5</u> )				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>6</u> )				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macroinvertebrates (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

\*perennial streams may also be identified using other methods. See p. 35 of manual.

<b>Notes:</b>
<b>Sketch:</b>

**PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:** 6/10/2020

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:**

Erin Shanaberger  
Charlotte-Mecklenburg Storm Water Services  
600 E. Fourth Street  
Charlotte, NC 28202  
[Erin.Shanaberger@ci.charlotte.nc.us](mailto:Erin.Shanaberger@ci.charlotte.nc.us)  
(704) 562-2691

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Wilmington District, Hinsdale-Tinkerbell Storm Drainage Improvement Project (SDIP), SAW-2020-01043

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

**(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)**

State: NC

County: Mecklenburg County

City: Charlotte

Center coordinates of site (lat/long in degree decimal format): Latitude: 35.133284° Longitude: -80.828972°

Universal Transverse Mercator: NAD 83

Name of nearest waterbody: McMullen Creek (HUC 03050103)

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): April 27, 2020

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.**

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resources in review area (acreage and linear feet, if applicable)	Type of aquatic resources (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Stream 1 (R4SB4)	35.135725°	80.836465°	53 lf (0.01 ac.)	Non-wetland waters	Section 404
Stream 1 (R5UB)	35.132032°	80.826817°	2,735 lf (0.69 ac.)	Non-wetland waters	Section 404
Stream 2 (R4SB4)	35.135521°	-80.836792°	132 lf (0.05 ac.)	Non-wetland waters	Section 404
Stream 3 (R6)	35.134181°	-80.828501°	41 lf (0.01 ac.)	Non-wetland waters	Section 404
Stream 3 (R4SB4)	35.133434°	-80.828580°	30 lf (0.01 ac.)	Non-wetland waters	Section 404
Stream 4 (R4SB4)	35.131321°	-80.826497°	2 feet (0.01 ac.)	Non-wetland waters	Section 404
Stream 5 (R4SB4)	35.131165°	-80.825680°	17 lf (0.01 ac.)	Non-wetland waters	Section 404

approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre- construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:

Map: \_\_\_\_\_

☒ Data sheets prepared/submitted by or on behalf of the PJD requestor.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report. Rationale: \_\_\_\_\_

☐ Data sheets prepared by the Corps: \_\_\_\_\_

☐ Corps navigable waters' study: \_\_\_\_\_

☐ U.S. Geological Survey Hydrologic Atlas: \_\_\_\_\_

☒ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: 1":24,000' Charlotte East, NC (1991)

☒ Natural Resources Conservation Service Soil Survey. Citation: NRCS Soils Survey of Mecklenburg Co. (2019)

☒ National wetlands inventory map(s). Cite name: USFWS NWI (2019)

☐ State/local wetland inventory map(s): \_\_\_\_\_

☒ FEMA/FIRM maps: \_\_\_\_\_

☐ 100-year Floodplain Elevation is: \_\_\_\_\_ (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☐ Aerial (Name & Date): \_\_\_\_\_

or ☒ Other (Name & Date): Site photographs, dated 4/27/2020

☐ Previous determination(s). File no. and date of response letter: \_\_\_\_\_

☐ Other information (please specify): \_\_\_\_\_

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

AMSCHLER.CRYSTA  
L.CAMILLE.1238614  
178

Digitally signed by  
AMSCHLER.CRYSTAL.CAMILLE.12  
38614178  
Date: 2020.08.21 15:19:34 -04'00'

*Erin Shanaberger*

Signature and date of Regulatory  
staff member completing PJD

Signature and date of person requesting PJD  
(REQUIRED, unless obtaining the signature is  
impracticable)<sup>1</sup>

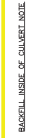
<sup>1</sup> Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.













## Amschler, Crystal C CIV USARMY CESAW (USA)

---

**From:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Sent:** Friday, August 7, 2020 10:36 AM  
**To:** Amschler, Crystal C CIV USARMY CESAW (US)  
**Subject:** [Non-DoD Source] FW: [External] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP  
**Attachments:** Hinsdale-TinkerbelleResponses\_20200717\_rev20200728.pdf

See the attached with the plansheet notes per our phone conversation.

**Kelly Thames,** PWS  
D 704.338.6710 M 704.996.9986

[hdrinc.com/follow-us](https://hdrinc.com/follow-us)

---

**From:** Thames, Kelly  
**Sent:** Monday, August 3, 2020 10:45 AM  
**To:** 'Johnson, Alan' <alan.johnson@ncdenr.gov>  
**Subject:** FW: [External] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Alan,

See the below and the attached.

Thanks,

**Kelly Thames,** PWS  
D 704.338.6710 M 704.996.9986

[hdrinc.com/follow-us](https://hdrinc.com/follow-us)

---

**From:** Thames, Kelly  
**Sent:** Tuesday, July 28, 2020 8:56 AM  
**To:** Johnson, Alan <alan.johnson@ncdenr.gov>  
**Cc:** Shanaberger, Erin <Erin.Shanaberger@ci.charlotte.nc.us>  
**Subject:** RE: [External] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Alan,

To clarify the below below, the attached contains the response with changes highlighted in yellow.

The impact table is highlighted where any changes were made → The type of impact for Impacts 42-47 changed from **permanent non-loss** to **temporary**, which changed the breakdown of LF amount per impact type.

For USACE Question 1 and DWR Question 3 → attached are updated plant sheets that reflect added notes detailed in the response. See yellow highlight in revised plan sheets.

For DWR Question 3 → the only design change was to add in sills on the Champaign St culvert (Sheet 7, highlighted in yellow).

Please let me know if any further clarifications are needed!

Thanks,  
Kelly

---

**From:** Johnson, Alan [mailto:alan.johnson@ncdenr.gov]  
**Sent:** Monday, July 20, 2020 1:48 PM  
**To:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Subject:** RE: [External] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

**CAUTION:** [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

IF there are changes in the impact (table). Just provide an updated impact table, but highlighting those impact areas that have a new/different impact

If there is a change to a design, just provide the impact area and the new design. Clarify what the old design called, then a copy of the new design



Alan D Johnson – Senior Environmental Specialist  
NC Dept. of Environment & Natural Resources (NCDENR)  
Division of Water Resources - Water Quality Regional Operations  
610 East Center Ave., Suite 301, Mooresville, NC 28115  
Phone: (704) 235-2200 Fax: (704) 663-6040

*E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.*

---

**From:** Thames, Kelly [mailto:Kelly.Thames@hdrinc.com]  
**Sent:** Friday, July 17, 2020 10:45 AM  
**To:** 'Amschler, Crystal C CIV USARMY CESAW (US) (Crystal.C.Amschler@usace.army.mil)' <Crystal.C.Amschler@usace.army.mil>; Johnson, Alan <alan.johnson@ncdenr.gov>  
**Cc:** Shanaberger, Erin <Erin.Shanaberger@ci.charlotte.nc.us>  
**Subject:** [External] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

**CAUTION:** External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [report.spam@nc.gov](mailto:report.spam@nc.gov)

Hi Crystal and Alan,

Thank you both for your emails regarding the Hinsdale-Tinkerbelle SDIP PCN application.

I've consolidated both of your emailed questions in one response (attached).

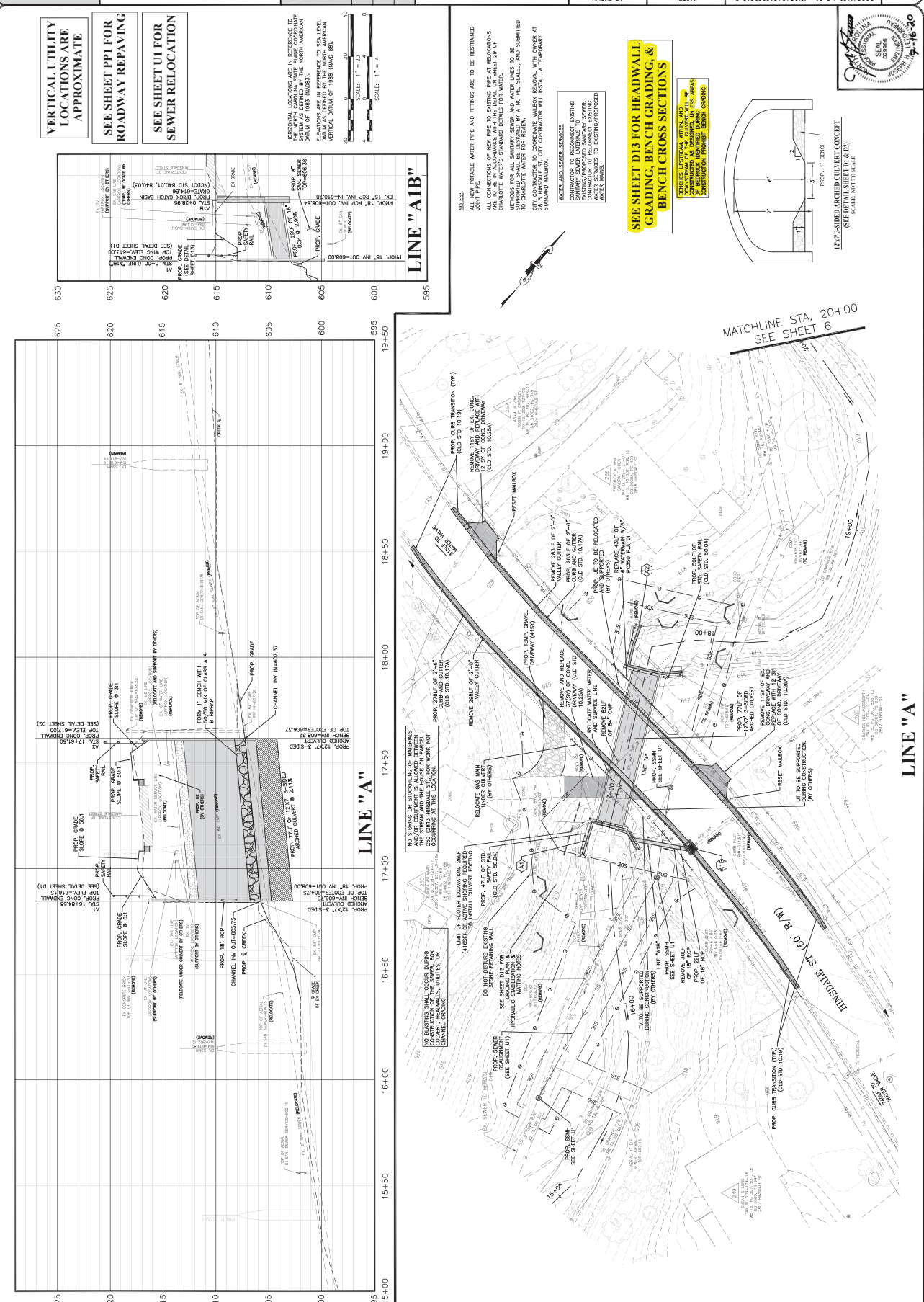
Please don't hesitate to reach out with any additional questions.

Thanks!  
Kelly

**Kelly Thames**, PWS  
*Environmental Project Manager*

**HDR**  
440 S. Church Street, Suite 1000  
Charlotte, NC 28202-2075  
**D** 704.338.6710 **M** 704.996.9986  
[kelly.thames@hdrinc.com](mailto:kelly.thames@hdrinc.com)

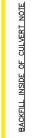
[hdrinc.com/follow-us](https://hdrinc.com/follow-us)











## Amschler, Crystal C CIV USARMY CESAW (USA)

---

**From:** Amschler, Crystal C CIV USARMY CESAW (US)  
**Sent:** Thursday, August 6, 2020 2:52 PM  
**To:** Thames, Kelly  
**Subject:** RE: SAW-2020-01043 Hinsdale-Tinkerbelle SDIP  
**Attachments:** benches.pdf; questions on 9-10 and 11.pdf

Hi Kelly,

Thanks for this info which has helped resolve most of my questions. I still have some that I'd like to discuss over the phone. The benches and bank stabilization in particular I'm not sure that I've made it clear what I'm specifically asking. I attached some schematics that show the areas that I'm trying to figure out impacts for. also still a little confused about the streams associated with impacts 9/10 and 11 (schematic attached for this also). take a look and call me at 828-526-6013 when you get a chance to discuss.

Thanks,  
Crystal C. Amschler  
Project Manager  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28403  
(828)-271-7980 Ext 4231

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

---

**From:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Sent:** Friday, July 17, 2020 10:45 AM  
**To:** Amschler, Crystal C CIV USARMY CESAW (US) <Crystal.C.Amschler@usace.army.mil>; Johnson, Alan <alan.johnson@ncdenr.gov>  
**Cc:** Shanaberger, Erin <erin.shanaberger@ci.charlotte.nc.us>  
**Subject:** [Non-DoD Source] SAW-2020-01043 Hinsdale-Tinkerbelle SDIP

Hi Crystal and Alan,

Thank you both for your emails regarding the Hinsdale-Tinkerbelle SDIP PCN application.

I've consolidated both of your emailed questions in one response (attached).

Please don't hesitate to reach out with any additional questions.

Thanks!  
Kelly

**Kelly Thames,** PWS  
Environmental Project Manager

**HDR**







**INDEX OF SHEETS**

Cover Sheet	1
General Notes and Standards	2
Storm Drainage Structure Table	3-k-C
Typical Sections and Details	4
Plan and Profile	5-7
Utilities	8
Plan and Profile	9-17
Utilities	18
Plan and Profile	19-29
Channel Design (Wildlands)	C1-C5
Channel Design (Wildlands)	C6
Channel Design (Wildlands)	C7-C12
Channel Design (Wildlands)	D1-D12, D14-D17
Headwall	
Erosion Control	
Water and Sewer	
Traffic Control	
Sidewalk	

**PE SEAL**

**RECORD DRAWINGS**

**CONVENTIONAL SIGNS**

Proposed Property Line	-----
Existing Property Line	-----
Maintained as R/W Line	-----
Existing Structures	-----
Proposed Edge of Pavement	-----
Fence	-----
Existing Easement	-----
Temporary Construction Easement	-----
Proposed Utility Easement	-----
Storm Drainage Easement	-----
Sanitary Sewer Easement	-----
Existing Gas Line	-----
Existing Water Line	-----
Existing Sanitary Sewer	-----
Existing Underground Telecommunications	-----
Existing Overhead Electric	-----
Existing Underground Electric	-----
Proposed Limits Of Disturbance	-----
Existing Storm Drainage	-----
Proposed Storm Drainage	-----
Proposed Handrail	-----
Existing Overhead Electric	-----
Proposed Sanitary Sewer	-----
Pipe Removal	-----
Proposed High Hazard Silt Fence	-----
Storm Drainage Plug	-----
Proposed Guardrail	-----
Silt Fence	-----
Special Sediment Control Fence	-----
Tree Protection	-----
Existing Tree	-----
Existing Water Meter	-----
Existing Water Valve	-----
Existing Gas Valve	-----
Existing Sanitary Sewer Manhole	-----
Proposed Sanitary Sewer Manhole	-----
Existing Storm Drain Manhole	-----
Proposed Storm Drain Manhole	-----
Proposed Water Meter	-----
Existing Catch Basin	-----
Proposed Catch Basin	-----
Proposed Junction Box	-----
Existing Light Pole	-----
Existing Utility Pole	-----
Gas Wire	-----
Proposed Utility Pole	-----
Iron Pin	-----
Existing Fire Hydrant	-----
Existing Drop Inlet	-----
Proposed Drop Inlet	-----
Accessible Ramp	-----
Proposed Curb & Gutter, Conc. Drive, Sidewalk	-----
Proposed Asphalt Pavement	-----
Proposed Rip Rap Ditch	-----
Proposed Pavement Removal	-----
Proposed Sidewalk Bridging Tree Roots	-----

**PE SEAL**

**RECORD DRAWINGS**

**CONVENTIONAL SIGNS**

Proposed Property Line	-----
Existing Property Line	-----
Maintained as R/W Line	-----
Existing Structures	-----
Proposed Edge of Pavement	-----
Fence	-----
Existing Easement	-----
Temporary Construction Easement	-----
Proposed Utility Easement	-----
Storm Drainage Easement	-----
Sanitary Sewer Easement	-----
Existing Gas Line	-----
Existing Water Line	-----
Existing Sanitary Sewer	-----
Existing Underground Telecommunications	-----
Existing Overhead Electric	-----
Existing Underground Electric	-----
Proposed Limits Of Disturbance	-----
Existing Storm Drainage	-----
Proposed Storm Drainage	-----
Proposed Handrail	-----
Existing Overhead Electric	-----
Proposed Sanitary Sewer	-----
Pipe Removal	-----
Proposed High Hazard Silt Fence	-----
Storm Drainage Plug	-----
Proposed Guardrail	-----
Silt Fence	-----
Special Sediment Control Fence	-----
Tree Protection	-----
Existing Tree	-----
Existing Water Meter	-----
Existing Water Valve	-----
Existing Gas Valve	-----
Existing Sanitary Sewer Manhole	-----
Proposed Sanitary Sewer Manhole	-----
Existing Storm Drain Manhole	-----
Proposed Storm Drain Manhole	-----
Proposed Water Meter	-----
Existing Catch Basin	-----
Proposed Catch Basin	-----
Proposed Junction Box	-----
Existing Light Pole	-----
Existing Utility Pole	-----
Gas Wire	-----
Proposed Utility Pole	-----
Iron Pin	-----
Existing Fire Hydrant	-----
Existing Drop Inlet	-----
Proposed Drop Inlet	-----
Accessible Ramp	-----
Proposed Curb & Gutter, Conc. Drive, Sidewalk	-----
Proposed Asphalt Pavement	-----
Proposed Rip Rap Ditch	-----
Proposed Pavement Removal	-----
Proposed Sidewalk Bridging Tree Roots	-----

**RECOMMENDED FOR CONSTRUCTION**

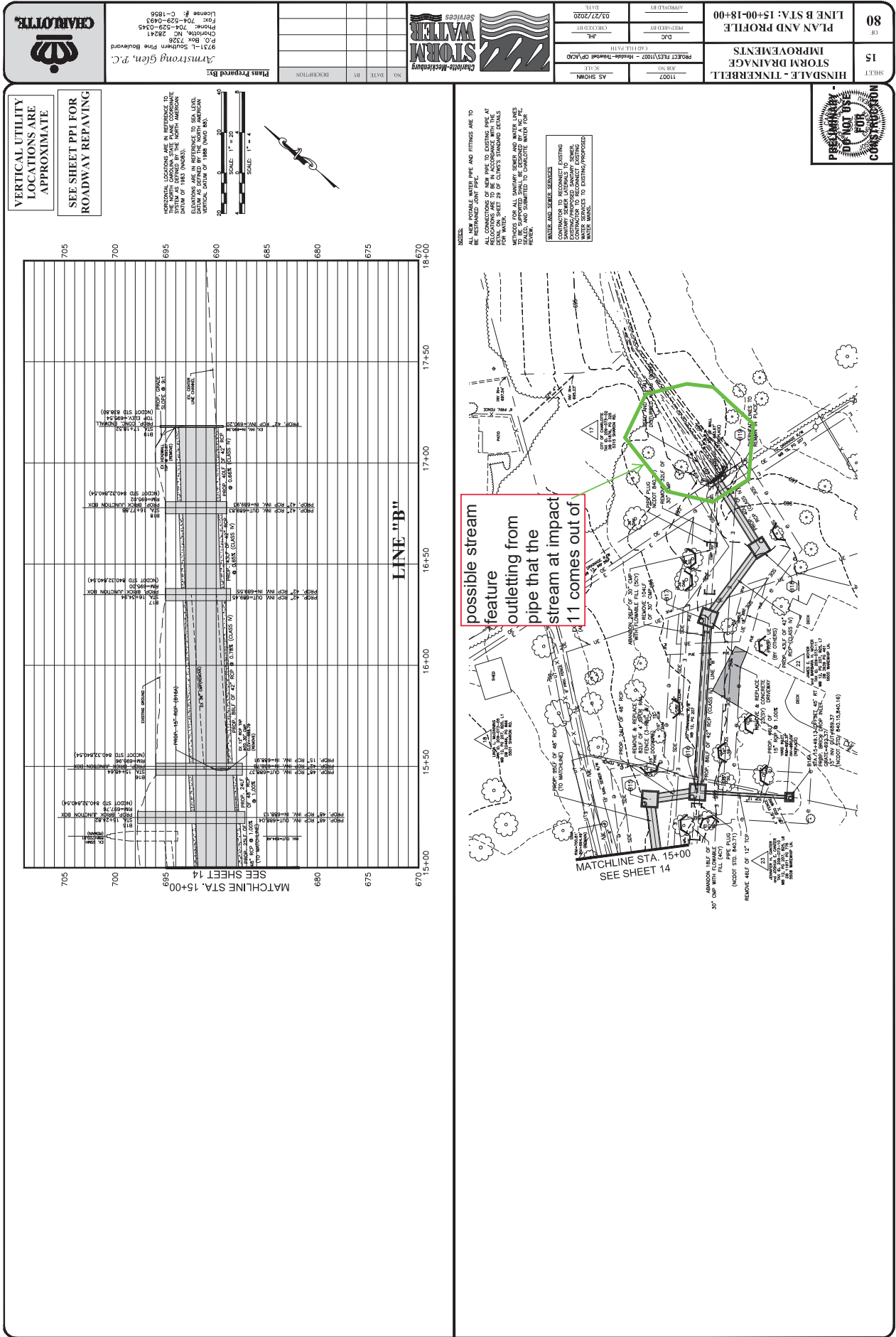
Contract Administration	
Storm Water Construction	
Landscape Management	
Utility Coordinator	
CDOT - Design	
CDOT - Implementation	
Charlotte Water	
Storm Water Project Manager	
Water Quality	

**Bid Set No.**

**APPROVED**

CITY ENGINEER DATE





## Amschler, Crystal C CIV USARMY CESA W (USA)

---

**From:** Thames, Kelly <Kelly.Thames@hdrinc.com>  
**Sent:** Friday, July 17, 2020 10:45 AM  
**To:** Amschler, Crystal C CIV USARMY CESA W (US); Johnson, Alan  
**Cc:** Shanaberger, Erin  
**Subject:** [Non-DoD Source] SAW-2020-01043 Hinsdale-Tinkerbell SDIP  
**Attachments:** Hinsdale-TinkerbellResponses\_20200717.pdf

Hi Crystal and Alan,

Thank you both for your emails regarding the Hinsdale-Tinkerbell SDIP PCN application.

I've consolidated both of your emailed questions in one response (attached).

Please don't hesitate to reach out with any additional questions.

Thanks!  
Kelly

**Kelly Thames**, PWS  
*Environmental Project Manager*

**HDR**  
440 S. Church Street, Suite 1000  
Charlotte, NC 28202-2075  
**D** 704.338.6710 **M** 704.996.9986  
kelly.thames@hdrinc.com

[hdrinc.com/follow-us](https://hdrinc.com/follow-us)

July 17, 2020

Ms. Crystal Amschler  
U.S. Army Corps of Engineers  
151 Patton Avenue  
Asheville, NC 28801

Mr. Alan Johnson  
NC Division of Water Resources  
610 East Center Ave, Suite 301  
Mooresville, NC 28115

**Subject: Responses to USACE and DWR Pre-Construction Notification Comments  
Hinsdale-Tinkerbell Storm Drainage Improvement Project (SDIP)  
SAW-2020-01043**

Dear Ms. Amschler and Mr. Johnson,

Thank you for your emails on July 10 and July 15, 2020 regarding questions on the Pre-Construction Notification (PCN) application for the Hinsdale-Tinkerbell Storm Drainage Improvement Project (SDIP). Responses are organized by requesting Agency.

## US Army Corps of Engineers – Crystal Amschler

1. First question is about benches and bank work. The plan sheets show impacts where riprap and aprons will be replaced, stream grading and culvert replacements, but no impacts along the banks for benches. Also, the plan shows for the double barrel crossings that the low flow culvert is off to the side with nothing on the plan showing that the stream width will be maintained and the low flow will be directed into the low floor culvert. The D plan series does however show cross sections with benches for each culvert and it looks like from these plans that there will be benches to maintain widths and direct flow into the low flow culverts. It would be helpful if the profile showed the extent of the bank work and benches as well. Also, the bank stabilization/benches should be included as permanent non-loss impacts for bank stabilization.

On Sheets 5, 6, 7, & 9 the plan set has been updated to note: “SEE SHEET D13 FOR HEADWALL GRADING” with “SEE SHEET D13 FOR HEADWALL GRADING, BENCH GRADING, AND BENCH CROSS SECTIONS”. In addition, a note has been added on each of those sheets that states, “Benches upstream and downstream of the culvert will be constructed as designed, unless areas of bedrock identified during construction prohibit bench grading.”

Impacts 13, 14, 17, 18, and 19 are those impacts associated with channel bank grading that includes bank benching and subsequent bank stabilization. These impacts are noted as permanent non-loss impacts in the impact summary table.

- a. And just to note, I understand that where the two bottomless culverts are, the area is underlain with bedrock. I'm concerned that any riprap/soil placed to build benches on bedrock would quickly wash away and end up in downstream reaches. I know that Erin and Alan and I discussed previously just letting the stream follow its current, natural course in these areas of bedrock instead of trying to artificially narrow the flow to widths above and below the bed rock areas like we would normally do. Not sure if the benches should be completely removed from the plans or if there should just be a note that the benches will be constructed or eliminated in areas of bedrock based on site conditions as identified during construction.

See the above response. Additionally, in areas where bedrock is encountered underlying the bottomless culverts, material will not be added to create a low flow channel.

2. I'm not seeing a PJD form. Please complete, sign and provide this form. Also couple questions on the JD:

We provided this as Delineation Only documentation per guidance from Bryan Roden-Reynolds. We were under the impression that he would be reviewing this project and I had a conversation with him directing me to submit in that way. It was only right before the application was submitted that we were directed to send the application to Steve Kichowski, and then after submitting we discovered it was in your hands, due to the familiarity with the project. Over several conversations with various USACE PMs, I have been directed that formal JD verification is not necessary for PCN submittals and we would like to pursue a Delineation Only option on this project, as there is at least one unacquired easement.

- a. Stream 3 is labeled as ephemeral and in the pictures it's looking really dry. DWR score is 18. Are you suggesting this stream is jurisdictional or just an ephemeral stormwater feature? Based on the information you provided its looking like a non-JD stormwater feature to me. If it turns out it's not JD, then you would want to remove Impact 12 from the impact table and impact calculations.

Yes, I am suggesting it's jurisdictional, but weak. I did observe an Ordinary High Water Mark (OHWM). It's highly degraded due to the outlet protection disrepair.

- b. The JD shows a couple of areas that the review area bulks out, but no waters there. Were there potential features in those areas and if not why was the map drawn this way. I attached the JD and circled in green the areas I am referring to. If these areas were drawn in this way due to potential waters please provide some photos and a stream form to verify they are non-JD.

The areas you circled in green are access areas for the project that connects road infrastructure to the stream riparian areas, but no jurisdictional features are located within these areas. The intent is to illustrate that access would not impact jurisdictional features.

3. Impacts 9/10 and 11 occur where the stream enters extensive stormwater systems. The outlet of these systems are outside of the review area included with the PJD so it's unclear if the other ends are continuations of these streams or if the streams start at the inlets to these stormwater systems. Not sure what happens at the end of sheet 11, but it definitely looks like it could be a stream at the end of sheet 15 and there appears that there may be work in that feature which would need to be included in impacts if it is jurisdictional. Please provide some clarification on if there are jurisdictional waters on the other end of these systems.

Impacts 9, 10, and 11 are within the review area. Please see the attached figure noting the Impact #s and their locations. Sheet 11 connects with Sheet 10, which follows a stormwater pipe system beneath Cotillion Avenue resulting in Impacts 9 and 10 at the outlet.

4. There are 7 temporary stream crossings proposed. As you know, we require that impacts be avoided and minimized to the maximum extent possible, and that includes temporary crossings. The stream should be crossed as few times as possible. Please provide justification on what the stream crossings can't be reduced.

With over a mile of channel in the neighborhood, with pockets of disjointed sewer and channel work located throughout, it was necessary to assume the possibility of 7 channel crossings in order to limit mass clearing. Saving trees is a big priority on this project, and providing access to these pockets of work via crossings limits the need for the contractor to traverse long stretches of channel bank.

5. Aerial lines as impacts but doesn't address impacts from open cutting. The PCN and plans show some burial and any time a stream is open cut to construct utility lines, those impacts should be identified as temporary impacts. The impact table should be revised to reflect the open cut impacts in the streams. Also, in areas that there is bedrock, I understand that blasting would be required for open cutting correct? You should provide some justification on why blasting can't be avoided, address potential risk of fracking and explain how the impact areas will be backfilled since you will be blasting in rock.

Impacts 40 and 41 are existing aerial lines that will both be slightly shifted downstream and buried via open cut methods. Impact 40 will be placed in bedrock via a chemical reaction material/drilling (i.e. no blasting) to break apart rock that cannot be broken by an excavator. It will be a shallow crossing ( $\leq 1$  foot) and backfill will not be necessary. Impacts 46 and 47 are existing aerial lines that will be replaced in the same footprint, but buried. Impacts 40, 41, 46, and 47 (those that will be buried) are all noted as temporary impacts in the impact table.

Impacts 42-45 are aerial crossings that will be replaced as aerial crossings in the same footprint and would not require open cut, but were noted as permanent non-loss impacts due to the bank work needed. Table 2 (impact summary table) from the PCN application is located at the end of this memo and Impacts 42-45 have been changed to temporary impacts and overall totals revised.

For sewer work on Sheets U4-U6 (Impacts 42-47), significant bedrock is not anticipated. If bedrock is encountered that requires removal, a note will be added to the plan set to have the contractor start with very small blast charges to limit damage to surrounding rock. The charges will be increased to remove the rock, if needed. The sewer trench will be backfilled with pieces of rock removed from blasting and select material per plan specifications.



6. Please provide overall plan sheets that show the locations for the EC and U series of plan sheets so I know where the impacts these plans show are located.

See the attached.

7. Last question regards NLEB. This project falls under situation 1 and in the standard email we send to FWS we need to provide an estimate of the number of, or the acreage of tree clearing. Please provide this information.

Total disturbed acreage is 10 acres.

## Division of Water Resources – Alan Johnson

1. Impact #1 and similar construction. You show riprap inside the culvert to maintain channel dimensions. Are they sized to stay in place per the storm event the culvert is designed? (Ex. 10 rain event isn't strong enough to move 12" riprap, 25 year rain event will wash away the 12" riprap). Will the riprap be backfilled with soil to fill the voids (or with crush run and/or screenings)?

See answer to Question 1 in the USACE question/response section. Benches upstream and downstream of the culvert will be constructed as designed, unless areas of bedrock identified during construction prohibit bench grading. Additionally, in areas where bedrock is encountered underlying the bottomless culverts, material will not be added to create a low flow channel.

2. Impact #2, the channel is cut...is this to have riprap? The slope may be gentle enough not to require, but you know how plans are. Sometimes the scale throws you off.

No rip rap is proposed at the inlets/outlets of the bottomless culverts at Hinsdale Street (Impact 1) and Highview Road (Impact 3).

3. Impact #5, I propose a sill at the up and down stream ends of culvert, to help hold grade and the fill material within the culvert. And all similar culvert designs.

Sills have been added on the upstream and downstream end of the culvert at Champaign Street (Impact 5). Sheet 7 will be updated to reflect this as well as a sill detail added to Sheet C7. Hinsdale Street (Impact 1) and Highview Road (Impact 3) are bottomless culverts and sills are not necessary. The culvert at Covered Bridge Lane (Impact 7) has a very gentle slope (0.30%) and sills are not necessary.

4. Impact #9 #10, why not extend the culvert to discharge at the current grade (flatten the slope), than continue the slope. Why the extension in the first place. Is riprap at the outfall? Was it pushed down stream? Is larger riprap proposed?

Extension of the stormwater pipe at this location (Impact 10) is due to a slight realignment of the pipe to avoid conflict with an adjacent sewer and residential shed structure. The minor 2-foot extension provides the necessary clearance for maintenance between the pipe outlet and the adjacent sewer. The extension is necessary because of the realignment, but is minimized in order avoid additional impacts to the channel. If extended further downstream, a rip rap apron would

still be necessary as the receiving stream has lower flow velocities than what would be discharged from the stormwater pipe. Per the Charlotte-Mecklenburg Storm Water Design Manual, scour protection is required whenever the velocities of flows leaving a stormwater system exceeds the erosive velocity of the downstream channel system. Additionally, rip rap is already located in the channel at this location, but requires enhancement and replacement due to displacement during construction (see Photograph 1 of the application). The size of rip rap will remain the same as was existing.

5. Impact #11, why propose riprap. Is the stream stable?

Per the Charlotte-Mecklenburg Storm Water Design Manual, scour protection is required whenever the velocities of flows leaving a stormwater system exceeds the erosive velocity of the downstream channel system. Additionally, rip rap is already located in the channel at this location, but requires enhancement and replacement due to displacement during construction (see Photograph 2 of the application).

6. Impact #18 and others. Always concerned about rock toes. Soil lifts (double wrapped) and heavy vegetation appropriate?

The proposed rock toes associated with Impacts 13, 18, 19 are located in areas where bank grading would be difficult due to a number of variables. A rock toe is proposed for Impact 13 on the left bank because of proximal sanitary sewer infrastructure that would be impacted by grading as well as limit heavy vegetation growth if a soil lift were installed. A rock toe is proposed for Impact 18 as the protection is needed for an undercut bank that exhibits significant topography upslope that would require substantial grading and tree removal to install any other form of bank protection. A rock toe is proposed for Impact 19 so that grading to tie into upstream and downstream banks would not be necessary as well as eliminate unnecessary tree clearing.

7. Proposed check dams Impact #20 through??? I assume this is for pump around for each section as they move down stream?

Rock check dams are associated with Impacts 20-23, 27-29, 32, 33, and 35-37. The Division of Energy, Mineral, Land Resources (DEMLR) during Sediment and Erosion Control plan review suggested to install check dams downstream of the various pockets of work, to help trap sediment from channel/culvert/sewer work. They are not associated with pump around operations. These rock check dams are temporary and will be removed once the upstream pocket of work is completed.

8. Riprap associated with culvert shall be embed into the streambed.

Rip rap will be embedded into existing grade in locations where rip rap is indicated.

Table 1. Summary of Impacts to On-Site Jurisdictional Waters of the U.S.

Jurisdictional Feature	Intermittent/ Perennial	NCSAM ID	NCSAM Score	Plan Sheet	Impact Number	Permit	Impact Type	Impact Type	Impact Length (lf)
Stream 1	Perennial RPW	9	Low	5	1	RGP 163	Culvert Replacement	Temporary	77 lf
					2	RGP 163	Grading	Permanent non-loss	65 lf
Stream 1	Perennial RPW	8	Low	6	3	RGP 163	Culvert Replacement	Temporary	61 lf
					4	RGP 163	Grading	Permanent non-loss	70 lf
Stream 1	Perennial RPW	6	Low	7	5	RGP 163	Culvert Replacement	Temporary	81 lf
					6	RGP 163	Grading	Permanent non-loss	50 lf
Stream 1	Perennial RPW	4	Low	9	7	RGP 163	Culvert Replacement	Temporary	58 lf
					8	RGP 163	Grading	Permanent non-loss	100 lf
Stream 1	Intermittent RPW	1	Low	10	9	RGP 163	Rip rap apron	Temporary	16 lf
					10	RGP 163	Outfall Extension	Permanent loss	2 lf
Stream 2	Intermittent RPW	2	Low	12	11	RGP 163	Rip rap apron	Permanent loss	20 lf
Stream 3	Ephemeral RPW	13	Low	28	12	RGP 163	Rip rap apron	Temporary	20 lf
Stream 1	Perennial RPW	3	Low	C1	13	RGP 163	Bank stabilization	Permanent non-loss	171 lf
Stream 1	Perennial RPW	3	Low	C2	14	RGP 163	Bank stabilization	Permanent non-loss	140 lf
Stream 1	Perennial RPW	7, 8	Low	C3	15	RGP 163	Channel realignment	Permanent non-loss	250 lf
					16	RGP 163	Channel grading	Permanent loss	94 lf
					17	RGP 163	Bank stabilization	Permanent non-loss	50 lf
Stream 1	Perennial RPW	10, 11	Low	C4	18	RGP 163	Bank stabilization	Permanent non-loss	244 lf
Stream 1	Perennial RPW	10, 11	Low	C4	18	RGP 163	Bank stabilization	Permanent non-loss	571 lf



Jurisdictional Feature	Intermittent/ Perennial	NCSAM ID	NCSAM Score	Plan Sheet	Impact Number	Permit	Impact Type	Impact Type	Impact Length (lf)
Stream 1	Perennial RPW	12	Medium	C5	19	RGP 163	Channel grading and stabilization	Permanent non-loss	150 lf
Stream 1	Perennial RPW	12	Medium	EC1	20	RGP 163	Rock Check Dam	Temporary	6 lf
					21	RGP 163	Rock Check Dam	Temporary	6 lf
					22	RGP 163	Rock Check Dam	Temporary	6 lf
					23	RGP 163	Rock Check Dam	Temporary	6 lf
					24	RGP 163	Temporary Crossing	Temporary	12 lf
					25	RGP 163	Temporary Crossing	Temporary	12 lf
Stream 1	Perennial RPW	11	Low	EC1A	26	RGP 163	Temporary Crossing	Temporary	12 lf
					27	RGP 163	Rock Check Dam	Temporary	6 lf
					28	RGP 163	Rock Check Dam	Temporary	6 lf
					29	RGP 163	Rock Check Dam	Temporary	6 lf
					30	RGP 163	Temporary Crossing	Temporary	12 lf
					31	RGP 163	Temporary Crossing	Temporary	12 lf
Stream 1	Perennial RPW	7	Low	EC3	32	RGP 163	Rock Check Dam	Temporary	6 lf
					33	RGP 163	Rock Check Dam	Temporary	6 lf
					34	RGP 163	Temporary Crossing	Temporary	12 lf
					35	RGP 163	Rock Check Dam	Temporary	6 lf
Stream 1	Perennial RPW	5	Low	EC5	36	RGP 163	Rock Check Dam	Temporary	6 lf
		4			37	RGP 163	Rock Check Dam	Temporary	6 lf
		4			38	RGP 163	Temporary Crossing	Temporary	12 lf
		5			39	RGP 163	Temporary Crossing	Temporary	12 lf
		4			40	NWP 3	Sanitary Sewer Line Crossing	Temporary	1 lf
Stream 1	Perennial RPW	6	Low	U2	41	NWP 3	Sanitary Sewer Line Crossing	Temporary	5 lf

Jurisdictional Feature	Intermittent/ Perennial	NCSAM ID	NCSAM Score	Plan Sheet	Impact Number	Permit	Impact Type	Impact Type	Impact Length (lf)
Stream 1	Perennial RPW	12	Medium	U4	42	NWP 3	Sanitary Sewer Line Crossing	Temporary	10 lf
					43	NWP 3	Sanitary Sewer Line Crossing	Temporary	10 lf
Stream 1	Perennial RPW	10, 11	Low	U5	44	NWP 3	Sanitary Sewer Line Crossing	Temporary	26 lf
					45	NWP 3	Sanitary Sewer Line Crossing	Temporary	11 lf
					46	NWP 3	Sanitary Sewer Line Crossing	Temporary	5 lf
Stream 1	Perennial RPW	10	Low	U6	47	NWP 3	Sanitary Sewer Line Crossing	Temporary	5 lf
Proposed Temporary Stream Impacts:									554 lf
Proposed Permanent (Non-Loss) Stream Impacts:									1,861 lf
Proposed Permanent (Loss) Stream Impacts:									116 lf

Should you have any questions or require additional information following your review of the enclosed materials, please contact me at (704) 338-6710 or [kelly.thames@hdrinc.com](mailto:kelly.thames@hdrinc.com).

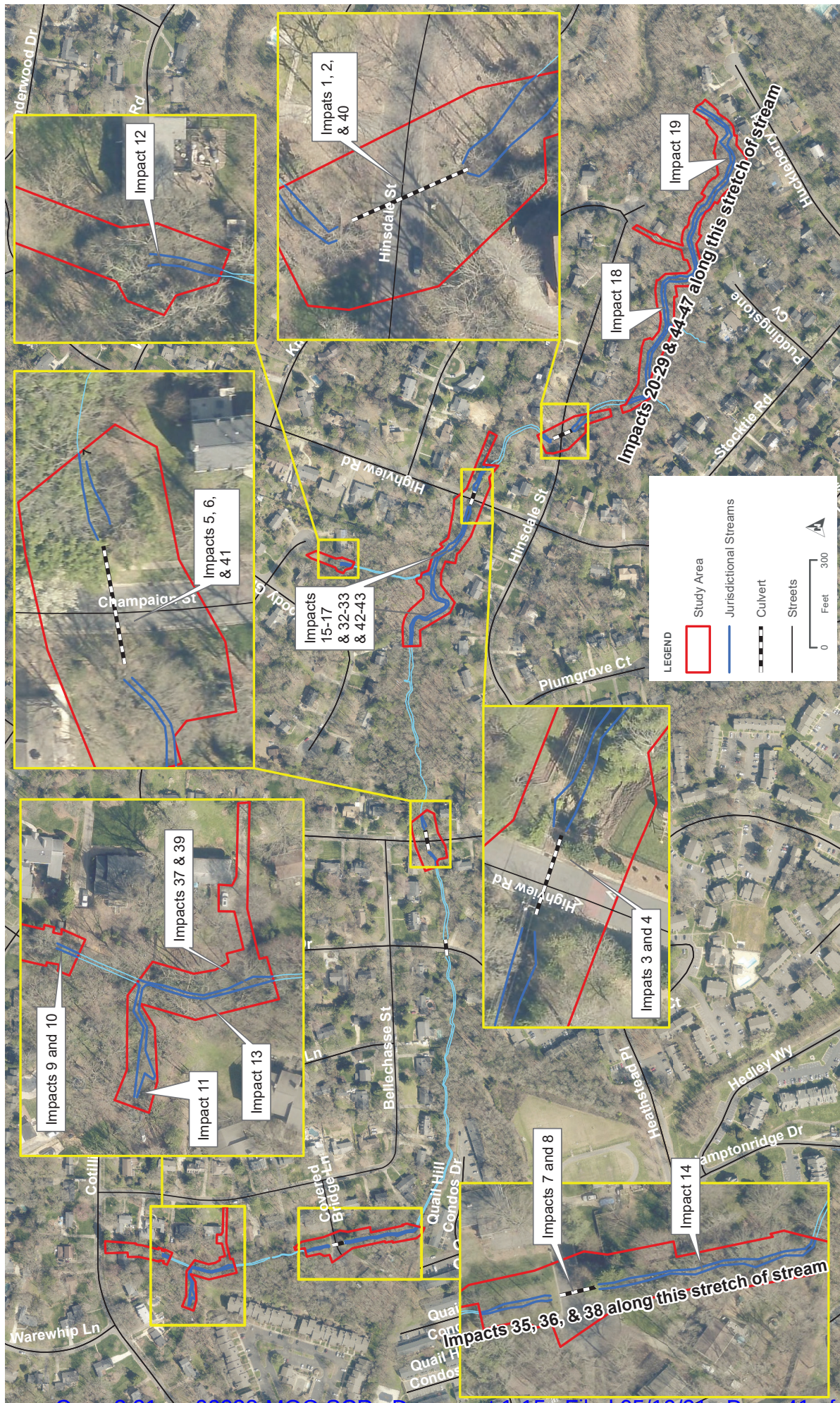
Sincerely,

A handwritten signature in cursive script that reads "Kelly Thames".

Kelly Thames, PWS  
*Environmental Project Manager*  
HDR


Attachments:                      Figure 6.4. Impact Locations  
   Overall Figure for EC and U Plan Set Series





HINSDALE-TINKERBELL SDIP  
IMPACT LOCATIONS  
FIGURE 6.4





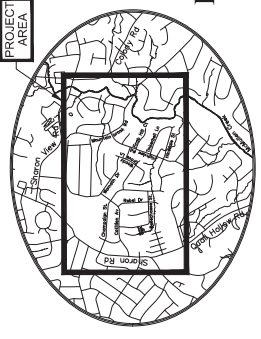
**Charlotte**  
ENGINEERING & PROPERTY  
MANAGEMENT

**Construction Plans of Proposed  
Hinsdale-Tinkerbell Storm Drainage  
Improvement Project**

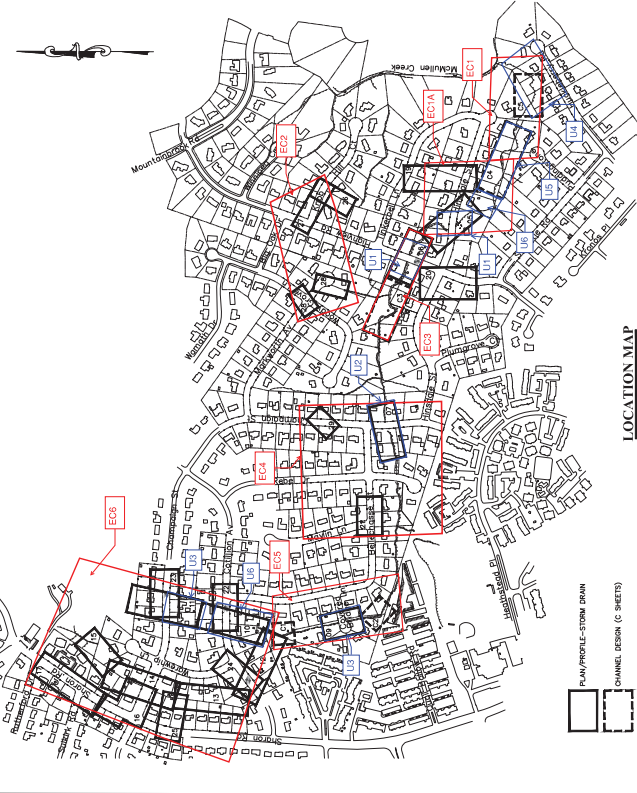
**Project No. 671-12-015**

**Project Features**

Storm Drain, Utility Relocation, Curb & Gutter,  
Sidewalk, Asphalt Paving, Stream Stabilization Features,  
and Traffic Control




**VICINITY MAP**  
NTS

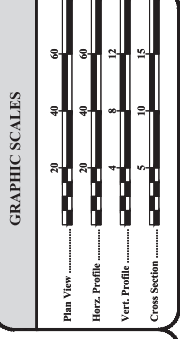


**LOCATION MAP**  
SCALE: 1" = 400'

NOTE: SHEET 8, 18 AND C6 HAS BEEN OMITTED FROM SET




PLAN/PROFILE-STORM DRAIN  
CHANNEL DESIGN (C-SHEETS)



**GRAPHIC SCALES**

Plan View ..... 20 40 60  
HORIZ. PROFILE ..... 20 40 60  
VERT. PROFILE ..... 1 5 10 15  
Cross Section ..... 5 10 15



**NCDOT 2018 STANDARD SPECIFICATIONS**


**INDEX OF SHEETS**

Cover Sheet	1
General Notes and Standards	2
Storm Drainage Structure Table	3a-c
Typical Sections and Details	4
Plan and Profile	5-7
Omitted	8
Plan and Profile	9-17
Omitted	18
Channel Design (Wildlands)	C1-C5
Omitted	C6
Channel Design (Wildlands)	C7-C12
Omitted	D1-D12, D14-D17
Handrail Grating	D13
Erosion Control Plans	EC1-EC10
Water and Sewer Permits	U1-A
Sewer Relocation Plan/Profile	U1-A16
Traffic Control Plans	TCF1
Pavement Plan	PP1-PP2
Sidewalk Ramp Design	CDDOT1-CDDOT2
TOTAL SHEETS	80

**SURVEY PREPARED BY:**

LASTING CONDITIONS TAKEN FROM GROUND SURVEY BY  
SURVEY AND MAPPING CONTROL, INC.  
ESTABLISHED BY: NCGS MONUMENT OR CONTROL POINT  
WITH NAD 83(2011) STATE PLANE COORDINATES.  
VERTICAL DATUM: NAVD 83  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL  
DISTANCES. DATE OF SURVEY: 2/25/2013

**PLANS PREPARED BY:**



**Armstrong Glen, P.C.**

9731-L Sudham Pine Boulevard  
P.O. Box 725 28241  
Phone: 704-329-5345  
Fax: 704-329-5343  
License #: C-1555

**PE SEAL**

**PRELIMINARY -  
DO NOT USE  
FOR CONSTRUCTION**

**Record Drawings**

**CONVENTIONAL SIGNS**

Proposed Property Line	---
Existing Property Line	---
Maintained as R/W Line	---
Existing Structures	---
Proposed Edge of Pavement	---
Fence	---
Existing Easement	---
Temporary Construction Easement	---
Proposed Utility Easement	---
Storm Drainage Easement	---
Sanitary Sewer Easement	---
Existing Gas Line	---
Existing Water Line	---
Existing Sanitary Sewer	---
Existing Underground Telecommunications	---
Existing Underground Electric	---
Proposed Limits Of Disturbance	---
Existing Storm Drainage	---
Proposed Storm Drainage	---
Proposed Handrail	---
Existing Overhead Electric	---
Proposed Sanitary Sewer	---
Pipe Removal	---
Proposed High Hazard Silt Fence	---
Storm Drainage Plug	---
Proposed Guardrail	---
Silt Fence	---
Special Sediment Control Fence	---
Tree Protection	---
Existing Tree	---
Existing Water Meter	---
Existing Water Valve	---
Existing Gas Valve	---
Existing Sanitary Sewer Manhole	---
Proposed Sanitary Sewer Manhole	---
Existing Storm Drain Manhole	---
Proposed Storm Drain Manhole	---
Proposed Water Meter	---
Existing Catch Basin	---
Proposed Catch Basin	---
Proposed Junction Box	---
Existing Light Pole	---
Existing Utility Pole	---
Gas Wire	---
Proposed Utility Pole	---
Iron Pin	---
Existing Fire Hydrant	---
Existing Drop Inlet	---
Proposed Drop Inlet	---
Accessible Ramp	---
Proposed Curb & Gutter, Conc. Drive, Sidewalk	---
Proposed Asphalt Pavement	---
Proposed Rip Rap Ditch	---
Proposed Pavement Removal	---
Proposed Sidewalk Bridging Tree Roots	---

**Bid Set No.**

**APPROVED**

CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

**RECOMMENDED FOR CONSTRUCTION**

Contract Administration
Storm Water Construction
Landscape Management
Utility Coordinator
CDOT - Design
CDOT - Implementation
Charlotte Water
Storm Water Project Manager
Water Quality

**CONTAINS SENSITIVE  
UTILITY INFORMATION  
DO NOT DUPLICATE**

**CONVENTIONAL SIGNS**

Proposed Property Line	---
Existing Property Line	---
Maintained as R/W Line	---
Existing Structures	---
Proposed Edge of Pavement	---
Fence	---
Existing Easement	---
Temporary Construction Easement	---
Proposed Utility Easement	---
Storm Drainage Easement	---
Sanitary Sewer Easement	---
Existing Gas Line	---
Existing Water Line	---
Existing Sanitary Sewer	---
Existing Underground Telecommunications	---
Existing Underground Electric	---
Proposed Limits Of Disturbance	---
Existing Storm Drainage	---
Proposed Storm Drainage	---
Proposed Handrail	---
Existing Overhead Electric	---
Proposed Sanitary Sewer	---
Pipe Removal	---
Proposed High Hazard Silt Fence	---
Storm Drainage Plug	---
Proposed Guardrail	---
Silt Fence	---
Special Sediment Control Fence	---
Tree Protection	---
Existing Tree	---
Existing Water Meter	---
Existing Water Valve	---
Existing Gas Valve	---
Existing Sanitary Sewer Manhole	---
Proposed Sanitary Sewer Manhole	---
Existing Storm Drain Manhole	---
Proposed Storm Drain Manhole	---
Proposed Water Meter	---
Existing Catch Basin	---
Proposed Catch Basin	---
Proposed Junction Box	---
Existing Light Pole	---
Existing Utility Pole	---
Gas Wire	---
Proposed Utility Pole	---
Iron Pin	---
Existing Fire Hydrant	---
Existing Drop Inlet	---
Proposed Drop Inlet	---
Accessible Ramp	---
Proposed Curb & Gutter, Conc. Drive, Sidewalk	---
Proposed Asphalt Pavement	---
Proposed Rip Rap Ditch	---
Proposed Pavement Removal	---
Proposed Sidewalk Bridging Tree Roots	---

## Amschler, Crystal C CIV USARMY CESAW (US)

---

**From:** Johnson, Alan <alan.johnson@ncdenr.gov>  
**Sent:** Wednesday, July 15, 2020 10:17 AM  
**To:** Thames, Kelly  
**Cc:** Amschler, Crystal C CIV USARMY CESAW (US); Shanaberger, Erin  
**Subject:** [Non-DoD Source] Hinsdale

- 1) Impact #1 and similar construction. You show riprap inside the culvert to maintain channel dimensions. Are they sized to stay in place per the storm event the culvert is designed? (Ex. 10 rain event isn't strong enough to move 12" riprap, 25 year rain event will wash away the 12" riprap). Will the riprap be backfilled with soil to fill the voids (or with crush run and/or screenings)?
- 2) Impact #2, the channel is cut...is this to have riprap? The slope may be gentle enough not to require, but you know how plans are. Sometimes the scale throws you off.
- 3) Impact #5, I propose a sill at the up and down stream ends of culvert, to help hold grade and the fill material within the culvert. And all similar culvert designs.IM
- 4) Impact #9 #10, why not extend the culvert to discharge at the current grade (flatten the slope), than continue the slope. Why the extension in the first place. Is riprap at the outfall? Was it pushed down stream? Is larger riprap proposed?
- 5) Impact #11, why propose riprap. Is the stream stable?
- 6) Impact #18 and others. Always concerned about rock toes. Soil lifts (double wrapped) and heavy vegetation appropriate?
- 7) Proposed check dams Impact #20 through ??? I assume this is for pump around for each section as they move down stream?
- 8) Riprap associated with culvert shall be embed into the streambed.

Thanks  
Alan



Alan D Johnson – Senior Environmental Specialist  
NC Dept. of Environment & Natural Resources (NCDENR)  
Division of Water Resources - Water Quality Regional Operations  
610 East Center Ave., Suite 301, Mooresville, NC 28115  
Phone: (704) 235-2200 Fax: (704) 663-6040

*E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.*

## Amschler, Crystal C CIV USARMY CESA W (US)

---

**From:** Johnson, Alan <alan.johnson@ncdenr.gov>  
**Sent:** Monday, July 13, 2020 8:27 AM  
**To:** Amschler, Crystal C CIV USARMY CESA W (US)  
**Subject:** [Non-DoD Source] RE: [External] FW: SAW-2020-01043 Hinsdale-Tinkerbelle Storm Drainage Improvement Project (UNCLASSIFIED)

The important thing is that they are properly removed. I had them send a hard copy to the office and I haven't yet taken a look.

Alan D Johnson – Senior Environmental Specialist NC Dept. of Environment & Natural Resources (NCDENR) Division of Water Resources - Water Quality Regional Operations  
610 East Center Ave., Suite 301, Mooresville, NC 28115  
Phone: (704) 235-2200 Fax: (704) 663-6040

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.

-----Original Message-----

From: Amschler, Crystal C CIV USARMY CESA W (US) [mailto:Crystal.C.Amschler@usace.army.mil]  
Sent: Friday, July 10, 2020 5:34 PM  
To: Johnson, Alan <alan.johnson@ncdenr.gov>  
Subject: [External] FW: SAW-2020-01043 Hinsdale-Tinkerbelle Storm Drainage Improvement Project (UNCLASSIFIED)

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to report.spam@nc.gov<mailto:report.spam@nc.gov>

Hey alan,

Wanted to ask you off-line your thoughts on all those check dams. I know its not ideal to put check dams in the creek but I guess with all the stream work they are doing makes sense to make sure no sediment loss downstream?

Crystal C. Amschler  
Project Manager  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28403  
(828)-271-7980 Ext 4231

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at:

Blocked[https://urldefense.com/v3/\\_\\_http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0\\_\\_;!!HYmSToo!NOj6RTQ5gluYvPqgmzxVBJ51c4biTghWbAqzDYGEuhrXdAto\\_gillto2tWRt0Cat6v1G\\$](https://urldefense.com/v3/__http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0__;!!HYmSToo!NOj6RTQ5gluYvPqgmzxVBJ51c4biTghWbAqzDYGEuhrXdAto_gillto2tWRt0Cat6v1G$)



-----Original Message-----

From: Amschler, Crystal C CIV USARMY CESAW (US)

Sent: Friday, July 10, 2020 5:31 PM

To: 'Thames, Kelly' <Kelly.Thames@hdrinc.com>

Cc: Shanaberger, Erin <Erin.Shanaberger@ci.charlotte.nc.us>; Johnson, Alan <alan.johnson@ncdenr.gov>

Subject: SAW-2020-01043 Hinsdale-Tinkerbelle Storm Drainage Improvement Project (UNCLASSIFIED)

Hi Kelly,

I've reviewed the PCN and have some questions I'd like to get clarified:

1) First question is about benches and bank work. The plan sheets show impacts where riprap and aprons will be replaced, stream grading and culvert replacements, but no impacts along the banks for benches. Also, the plan shows for the double barrel crossings that the low flow culvert is off to the side with nothing on the plan showing that the stream width will be maintained and the low flow will be directed into the low flow culvert. The D plan series does however show cross sections with benches for each culvert and it looks like from these plans that there will be benches to maintain widths and direct flow into the low flow culverts. It would be helpful if the profile showed the extent of the bank work and benches as well. Also, the bank stabilization/benches should be included as permanent non-loss impacts for bank stabilization.

And just to note, I understand that where the two bottomless culverts are, the area is underlain with bedrock. I'm concerned that any riprap/soil placed to build benches on bedrock would quickly wash away and end up in downstream reaches. I know that Erin and Alan and I discussed previously just letting the stream follow its current, natural course in these areas of bedrock instead of trying to artificially narrow the flow to widths above and below the bed rock areas like we would normally do. Not sure if the benches should be completely removed from the plans or if there should just be a note that the benches will be constructed or eliminated in areas of bedrock based on site conditions as identified during construction.

2) I'm not seeing a PJD form. Please complete, sign and provide this form. Also couple questions on the JD:

- Stream 3 is labeled as ephemeral and in the pictures it's looking really dry. DWR score is 18. Are you suggesting this stream is jurisdictional or just an ephemeral stormwater feature. Based on the information you provided it's looking like a non-JD stormwater feature to me. If it turns out it's not JD, then you would want to remove Impact 12 from the impact table and impact calculations.

- The JD shows a couple of areas that the review area bulks out, but no waters there. Were there potential features in those areas and if not why was the map drawn this way. I attached the JD and circled in green the areas I am referring to. If these areas were drawn in this way due to potential waters please provide some photos and a stream form to verify they are non-JD.

3) Impacts 9/10 and 11 occur where the stream enters extensive stormwater systems. The outlet of these systems are outside of the review area included with the PJD so it's unclear if the other ends are continuations of these streams or if the streams start at the inlets to these stormwater systems. Not sure what happens at the end of sheet 11, but it definitely looks like it could be a stream at the end of sheet 15 and there appears that there may be work in that feature which would need to be included in impacts if it is jurisdictional. Please provide some clarification on if there are jurisdictional waters on the other end of these systems.

4) there are 7 temporary stream crossings proposed. As you know, we require that impacts be avoided and minimized to the maximum extent possible, and that includes temporary crossings. The stream should be crossed as few times as possible. Please provide justification on what the stream crossings can't be reduced.

5) the sewer impacts describe removing pilings for aerial lines as impacts but doesn't address impacts from open cutting. The PCN and plans show some burial and any time a stream is open cut to construct utility lines, those impacts

should be identified as temporary impacts. The impact table should be revised to reflect the open cut impacts in the streams. Also, in areas that there is bedrock, I understand that blasting would be required for open cutting correct? You should provide some justification on why blasting can't be avoided, address potential risk of fracking and explain how the impact areas will be backfilled since you will be blasting in rock.

6) Please provide overall plan sheets that show the locations for the EC and U series of plan sheets so I know where the impacts these plans show are located.

7) Last question regards NLEB. This project falls under situation 1 and in the standard email we send to FWS we need to provide an estimate of the number of, or the acreage of tree clearing. Please provide this information.

Just want to say that overall, this permit application was well organized and the plans and description of proposed activities was easy to follow which I appreciate since these big projects with impacts all over can get messy and it can be hard to figure out what's going on.

Thanks,  
Crystal C. Amschler  
Project Manager  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28403  
(828)-271-7980 Ext 4231

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at:

Blocked[https://urldefense.com/v3/\\_\\_http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0\\_\\_!!HYmSToo!NOj6RTQ5gluYvPqgmzxVBJ51c4biTghWbAqzDYGEuhrXdAto\\_gillto2tWRt0Cat6v1G\\$](https://urldefense.com/v3/__http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0__!!HYmSToo!NOj6RTQ5gluYvPqgmzxVBJ51c4biTghWbAqzDYGEuhrXdAto_gillto2tWRt0Cat6v1G$)